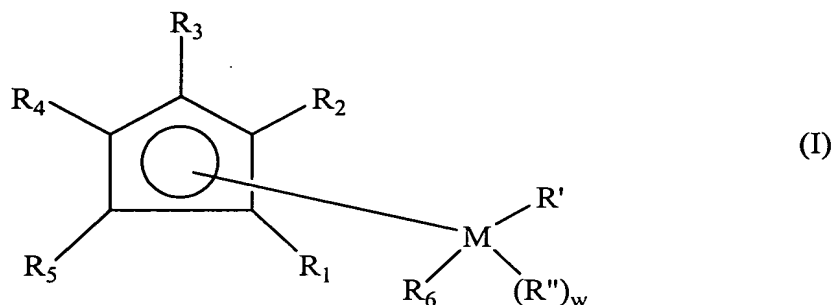


IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A metallocene complex of a metal of group 4 of the periodic table having the following formula (I):



wherein:

- M is a metal selected from the group consisting of titanium, zirconium and hafnium, coordinatively bonded to a first η^5 -cyclopentadienyl group;
- R' represents an unsaturated hydrocarbyl group;
- R'' represents ~~an optional~~ a group anionically bonded to the metal M, consisting of an organic or inorganic radical, different from cyclopentadienyl or substituted cyclopentadienyl;
- the groups R₁, R₂, R₃, R₄ and R₅, each independently ~~represent~~ represents, an atom or radical bonded to said first η^5 -cyclopentadienyl group, and is selected from the group consisting of hydrogen, ~~or any other suitable organic groups and~~ or inorganic ~~substituent of said cyclopentadienyl group~~ groups;
- R₆ represents ~~any other suitable~~ an organic or inorganic group, anionically bonded to the metal M;
- "w" has the value of 0 or 1, ~~depending on whether the R'' group is absent or present in formula (I);~~ characterized in that

wherein said R¹ group consists of an unsaturated oligomeric group having the following formula (II):



wherein:

- A represents any monomeric unit ~~deriving~~ derived from a vinylaromatic group polymerizable by means of anionic polymerization, having from 6 to 20 carbon atoms;
- D represents any monomeric unit ~~deriving~~ derived from a conjugated diolefin polymerizable by means of anionic polymerization, having from 4 to 20 carbon atoms;
- U represents any generic ~~optional~~ monomeric unit ~~deriving~~ derived from an unsaturated compound co-polymerizable with any of the above conjugated diolefins D or vinylaromatic compounds A;
- R¹ represents hydrogen or a hydrocarbyl group having from 1 to 20 carbon atoms;
- each index "x" and "y" can be independently zero or an integer, provided the sum (x+y) is equal to or higher than 2;
- "z" can be zero or an integer ranging from 1 to 20;

with the proviso that, when R₆ is a η^5 -cyclopentadienyl or substituted η^5 -cyclopentadienyl group and R' is -(A_x)R¹, R" is different from -(A_x)R¹.

Claim 2 (Currently Amended): The metallocene complex according to claim 1, wherein the metal M is selected from the group consisting of titanium and zirconium.

Claim 3 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein the metal M is titanium in oxidation state +3 and "w" in formula (I) is equal to 0.

Claim 4 (Currently Amended): The metallocene complex according to ~~any of the previous claims 1 or 2~~ claim 1, wherein M is zirconium in oxidation state +4 and "w" in formula (I) is 1.

Claim 5 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said monomeric units of the D type in formula (II) derive from 1,3-diolefins having from 4 to 20 carbon atoms.

Claim 6 (Currently Amended): The metallocene complex according to claim 5, wherein said 1,3-diolefin is selected from the group consisting of 1,3-butadiene, isoprene, 1,3-pentadiene, 2-methyl-1,3-pentadiene, and 1,3-hexadiene.

Claim 7 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said monomeric units of the A type in formula (II) derive from vinylaromatic hydrocarbyl compounds having from 8 to 15 carbon atoms.

Claim 8 (Currently Amended): The metallocene complex according to claim 7, wherein said vinylaromatic compound is selected from the group consisting of styrene, α -methylstyrene, p-methylstyrene, and vinylnaphthalene.

Claim 9 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said sum (x+y) of the indexes in formula (II) is between 2 and 50.

Claim 10 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein the sum of the indexes (x+y+z) in formula (II) is between 2 and 15.

Claim 11 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein "z" in formula (II) is equal to 0.

Claim 12 (Currently Amended): The metallocene complex according to ~~any of the previous claims from 1 to 9~~ claim 1, wherein "x" and "z" in formula (II) are both equal to 0 and said group R' consists of an oligomer of a conjugated diene D with an average polymerization degree from 2 to 15.

Claim 13 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said group R¹ in formula (II) represents an aliphatic, cycloaliphatic, aromatic or alkyl aromatic group having from 2 to 10 carbon atoms; ~~preferably selected from tert-butyl, n-butyl, isopropyl, n-hexyl, cyclohexyl, benzyl, phenyl and toluyl.~~

Claim 14 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said group R" or said group R₆ are independently selected from the group consisting of hydrogen, halogen, an alkyl C₁-C₂₀ group, ~~an~~ or alkyl aryl C₁-

C₂₀ group, an allyl C₃-C₂₀ group, an alkyl silyl C₃-C₂₀ group, a cycloalkyl C₅-C₂₀ group, an aryl ~~C₆-C₂₀ group, an~~ aryl alkyl C₆-C₂₀ group, an alkoxide ~~C₁-C₂₀ group, a~~ thioalkoxide C₁-C₂₀ group, a carboxylate ~~or C₂-C₂₀ group, a~~ carbamate C₂-C₂₀ group, a dialkyl amide C₂-C₂₀ group and an alkyl silylamide C₄-C₂₀ group.

Claim 15 (Currently Amended): The metallocene complex according to ~~any of the previous claims 1 to 13~~ claim 1, wherein both said groups R' and R" in formula (I) are independently oligomeric groups having formula (II), ~~preferably essentially having the same formula.~~

Claim 16 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said group R₆ is "~~bridge~~" ~~bonded~~ bridge-bonded to said first cyclopentadienyl group having formula (I) to form an overall cyclic structure including the metal M.

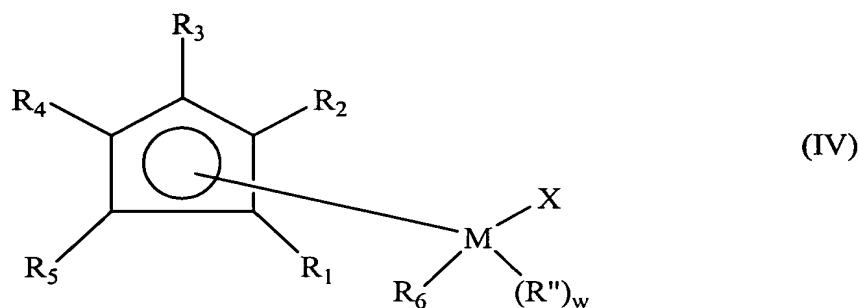
Claim 17 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, wherein said group R₆ represents a second cyclopentadienyl group η^5 -coordinated to the metal M.

Claim 18 (Currently Amended): The metallocene complex according to claim 17, wherein said first and second cyclopentadienyl group are equal to each ~~other~~ other.

Claim 19 (Currently Amended): The metallocene complex according to ~~any of the previous claims 1 or 15~~ claim 1, wherein said group R₆ represents a further oligomeric group having formula (II).

Claim 20 (Currently Amended): The metallocene complex according to ~~any of the previous claims~~ claim 1, also comprising one or more neutral coordinating compounds.

Claim 21 (Currently Amended): A process for the preparation of a metallocene complex according to ~~any of the previous claims~~ claim 1, comprising the contact and reaction, ~~in suitable proportions~~, of a metallocene precursor having the following formula (IV):



wherein: the symbols M, R'', R₁, R₂, R₃, R₄, R₅, R₆, and

"w" can have any of the meanings for the corresponding symbols in formula (I), according to ~~any of the previous claims~~ claim 1, and

X represents a ~~suitable~~ an outgoing anionic group in a nucleophilic substitution reaction on the metal M;

with an organometallic compound having the following formula (V):



wherein:

the symbols A, D, U, R^I, "x", "y" and "z" can have any of the meanings ~~mentioned~~ for the corresponding symbols in formula (II) of claim 1,

M' is a metal selected from the group consisting of metals of groups 1 ~~or~~ and 2 of the periodic table of elements,

T is any ~~suitable~~ organic or inorganic anion, or another group having the formula $(A_x D_y U_z) R^I$,

"t" has the value of 0 when M' is a metal of group 1, and the value of 1 when M' is a metal of group 2 of the periodic table,

until the ~~desired~~ compound having formula (I) is obtained.

Claim 22 (Currently Amended): The process according to claim 21, carried out in the presence of a ~~suitable an~~ inert solvent, ~~preferably hydrocarbon~~, and at a temperature ranging from -60 to +100°C.

Claim 23 (Original): The process according to claim 22, carried out at a temperature ranging from -20 to +40°C, for a period of 5 minutes to two hours.

Claim 24 (Currently Amended): The process according to claim 22 ~~or 23~~, wherein said solvent is selected from the group consisting of cyclohexane, hexane, heptane, toluene and ethyl benzene.

Claim 25 (Currently Amended): The process according to ~~any of the claims from 21 to 24~~ claim 21, wherein said organometallic compound having formula (V) is added to the precursor having formula (IV) in an inert solvent.

Claim 26 (Currently Amended): The process according to ~~any of the claims from 21 to 25~~ claim 21, wherein said organometallic compound having formula (V) is obtained by means of a living anionic polymerization reaction.

Claim 27 (Currently Amended): The process according to claim 26, wherein said organometallic compound having formula (V) is ~~directly~~ used as obtained in ~~the~~ a preparation solution thereof.

Claim 28 (Currently Amended): The process according to ~~any of the claims from 21 to 27~~ claim 21, wherein said precursor having formula (IV) and said organometallic compound having formula (V) are put in contact with each other with atomic ratios M'/M close to the stoichiometric value and up to a molar excess of 15% of M' with respect to M.

Claim 29 (Currently Amended): The process according to ~~any of the claims from 21 to 28~~ claim 21, wherein in said precursor having formula (IV), said outgoing group X is selected from the group consisting of a chloride group, a ~~or~~ bromide group, an alkyl silyl C₃-C₂₀ group, an alkoxide C₁-C₂₀ group, a ~~or~~ thioalkoxide C₁-C₂₀ group, a carboxylate C₂-C₂₀ group, a ~~or~~ carbamate C₂-C₂₀ group, a dialkyl amide C₂-C₂₀ group and a alkyl silylamide C₄-C₂₀ group.

Claim 30 (Original): The process according to claim 29, wherein said X group in formula (IV) is chloride or bromide.

Claim 31 (Currently Amended): The process according to ~~any of the claims from 21 to 30~~ claim 21, wherein the symbols X and R" in said precursor having formula (IV) both represent ~~a suitable~~ an outgoing anionic group, ~~preferably chloride~~.

Claim 32 (Currently Amended): The process according to ~~any of the claims from 21 to 30~~ claim 21, wherein the symbols X, R" and R₆ in said precursor having formula (IV) all independently represent ~~a suitable~~ an outgoing anionic group, ~~preferably chloride~~.

Claim 33 (Currently Amended): The process according to ~~any of the claims from 21 to 32~~ claim 21, wherein said metal M' in the compound having formula (V) is selected from the group consisting of lithium, sodium ~~or~~ and magnesium, ~~preferably lithium~~.

Claim 34 (Currently Amended): Metallocene complex according to claim 1, wherein at least one of said groups R' , R" ~~[[e]]~~ and R₆ includes an olefinically unsaturated double bond.

Claims 35-36 (Canceled).

Claim 37 (New): The metallocene complex according to claim 13, wherein said group R¹ in formula (II) is selected from the group consisting of tert-butyl, n-butyl, isopropyl, n-hexyl, cyclohexyl, benzyl, phenyl and toluyl.

Claim 38 (New): The metallocene complex according to claim 15, wherein groups R' and R" essentially have the same formula.

Claim 39 (New): The process according to claim 22, wherein the inert solvent is a hydrocarbon.

Claim 40 (New): The process according to claim 31, wherein X and R" are both chloride.

Claim 41 (New): The process according to claim 32, wherein X, R" and R₆ are all chloride.

Claim 42 (New): The process according to claim 33, wherein M' is lithium.

Claim 43 (New): A catalytic composition comprising the metallocene complex according to claim 1, and a co-catalyst.

Claim 44 (New): A process comprising (co)polymerization of an α -olefin in the presence of the metallocene complex according to claim 1.

Claim 45 (New): A process comprising hydrogenation of an ethenically unsaturated compound in the presence of the metallocene complex according to claim 1.

DISCUSSION OF THE AMENDMENT

The claims have been amended by removing all multiple dependency and by incorporating appropriate Markush terminology. In addition, the term "suitable" has been deleted from the claims as redundant, since the claims necessarily exclude non-suitable components, proportions, etc. In addition, claim 1 has been amended by deleting the word "optional" in the definition of R" and U, since the value for "w" and "z", respectively, will determine whether these groups are present or not. See also the specification at page 16, line 7ff for the amendment to R₁ through R₅, and page 18, lines 3-5 for the amendment to R₆.

The quotes in Claim 16 have been deleted. "e" has been replaced with --and-- in Claim 34.

Narrowing, alternative language has been deleted from Claims 13, 15, 22, and 31-33. The deleted matter is now the subject of new Claims 37-42, respectively.

Claims 35 and 36 have been canceled. New Claims 43-45 have been added. Claim 43 is supported in the specification at page 5, line 11. Claims 44 and 45 are supported in the specification at page 1, lines 11-12.

No new matter is believed to have been added by the above amendment. Claims 1-34 and 37-45 are now pending in the application.